DOCUMENT RESUME

ED 317 208 IR 053 084

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TITLE	Interlibrary Loan in Academic and Research Libraries: Workload and Staffing.
INSTITUTION	Association of Research Libraries, Washington, D.C. Office of Management Studies.
REPORT NO	ISBN-0-918006-60-0
PUB DATE	Aug 89
NOTE	28p.
AVAILABLE FROM	Office of Management Services, Association of Research Libraries, 1527 New Hampshire Avenue, NW, Washington, DC 20036 (Publication Number OP15).
PUB TYPE	Viewpoints (120) -- Reports - Research/Technical (143) -- Tests/Evaluation Instruments (160)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	*Academic Libraries; Cost Effectiveness; Efficiency; Guidelines; Higher Education; *Interlibrary Loans; Paraprofessional Personnel; Professional Personnel; Program Effectiveness; Questionnaires; *Research Libraries; *Self Evaluation (Groups); Work Environment

ABSTRACT

A dramatic increase in interlibrary loan (ILL) in academic and research libraries in the last five years, combined with a changing office environment, is forcing reassessment of the relationship between the volume and cost of loans to service quality. In the spring of 1988, a survey was sent to 116 member libraries of the Association of Research Libraries (ARL) to gather data about workload, professional and non-professional staffing levels, use of bibliographic utilities, fillrates, and perceptions about staffing adequacy. This report uses the 76 responses received to present an overview of ILL staffing patterns, test assumptions about workloads and fillrates, and suggest some guidelines for libraries to follow in the analysis of their own efficiency and effectiveness. In conclusion, it is suggested that the importance of professionals in ILL may be underestimated, and that increasing ILL activity may be causing a reduction in the quality of service in borrowing operations. Six tables highlight survey responses. Appended are a copy of the survey and cover letter; a self-analysis workform showing median productivity levels for libraries found to be effective and efficient in ILL operations; and linear and quadratic correlations and a chart for monthly analysis of unfills. (11 references) (NRP)

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Interlibrary Loan In Academic and Research Libraries: Workload and Staffing

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August 1989

INTERLIBRARY LOAN IN ACADEMIC AND RESEARCH LIBRARIES:
WORKLOAD AND STAFFING

is published by the
Office of Management Services
Association of Research Libraries
1527 New Hampshire Avenue, NW
Washington, DC 20036

Order by title and publication number: **OP15**.
Prepayment is required, with check made payable to:
"ARL Office of Management Services"

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ISBN # 0-918006-60-0

Abstract

This occasional paper provides an overview of interlibrary loan (ILL) staffing patterns which reflect current technologies and services in academic and research libraries. It is based on a survey of 116 members of the Association of Research Libraries (ARL) which was conducted in the spring of 1988. The authors discuss the effect of workload on fillrates and present guidelines for libraries to use in analyzing their own efficiency and effectiveness. The ratio of professional to paraprofessional, and the use of student workers are reviewed to provide administrators with another way to compare operations and suggest successful strategies if reorganization is necessary. The median productivity of libraries found to be effective and efficient in ILL operations is included in a self-analysis workform found at the end of the paper.

Correlations and analyses derived from the survey suggest that the importance of professionals in ILL may be underestimated. The results also indicate that increasing ILL activity may be causing staff to reduce inadvertently the quality of service in borrowing operations.

Introduction

A current concern of many ILL librarians is the need for adequate staffing to cope with growing demands in ILL. Many ILL managers are concerned with the need to justify additional staff to library administration, and frequently question their colleagues about office staffing levels. Changes in ILL utilities and electronic mail, use of telefacsimile, exploding serials subscription costs, microcomputer record keeping, document delivery and a myriad of other factors are contributing to a change in ILL office organization.

Records show that ILL has increased dramatically in academic and research libraries in the last five years. Although Waldhart indicates that increased ILL request projections conflict with each other and may be difficult to realistically determine, the *ARL Annual Statistics* show roughly a 50% increase in requests within its membership between 1980/81 and 1987/88.[1,2]

Median university interlibrary loans 80/81

loaned = 12,159 borrowed = 5,072

Median university interlibrary loans 87/88

loaned = 18,198 borrowed = 8,078

Statistics included in the OMS/ARL SPEC Kit 127, *Interlibrary Loan in ARL Libraries*, also document an increase in lending and borrowing activity.[3] Other indications of an increased workload come from new policies in net lending libraries, such as the recent policy adopted by the Research Libraries Group. Net lending RLG libraries are now recipients of formula funded payments for the number of loans they fill beyond a minimum level.

In short, the additional workload in ILL has forced libraries to increase staffing and find some method of paying for the additional staff, usually through subsidies or fees.[4] This combination of increasing workload and changing office environment is forcing reassessments of the way work has been done in the past. Previous ILL studies have focused on the characteristics and costs of loans,[5] but they have not specifically addressed the relationship of these factors to service quality. For example, what happens to fillrates when workload increases and staffing levels do not?

In an effort to address this question and to determine a measure for staffing needs at the University of Oklahoma libraries, we conducted a regional survey in the fall of 1987. After reviewing the data in that pilot survey, we reorganized our survey form and in the spring of 1988 sent the new survey to 116 ARL libraries. The new survey (see appendixes A and B) was designed to determine how many and what types of staff worked in both borrowing and lending. It was used to gather data about workload, professional and

non-professional staffing levels, use of bibliographic utilities, fillrates and perceptions about staffing adequacy. In addition, questions on wrapping and photocopying duties were included to round out the workload analysis.

Seventy-six libraries responded to the survey for a response rate of 64%. Five of the responding libraries loaned more than 50,000 items annually and 12 libraries loaned fewer than 10,000 items annually. Fifteen of the 76 libraries borrowed more than 10,000. Table 1 is a listing of the highest, median, and lowest responses to most questions and provides an overview of the sample population. In order to set a standard for comparison of data, we

Table 1 Highest, Median, and Lowest Responses to Most Survey Questions

Question	*High*	*Median*	*Low*
# of Lending Librarians (FTE)	8	.3	0
# of Lending Staff (FTE)	32	2.0	.3
# of Lending Students (FTE)	6	1.0	0
# of Borrowing Librarians (FTE)	3	.5	0
# of Borrowing Staff (FTE)	5.25	1.75	0
# of Borrowing Students (FTE)	2	.5	0
Lending Fillrate (%)	91	58	34
Borrowing Fillrate (%)	97.39	84	60
Total Lending Requests	172,082	18,807	940
Total Borrowing Requests	43,859	6,342	97
Lending Output	14,000	5,429	1,119
Borrowing Output	7,371	2,130	97

found it necessary to describe libraries in terms of efficiency and effectiveness. Williams addresses **efficiency** in library measures as "results achieved/resources consumed."[6] In this paper, we will use output as our measure of efficiency and define it as:

$$output = \frac{\text{number of requests processed annually}}{\text{fulltime staff equivalent}}$$

Although this measure ignores the effect of resources such as bibliographic utilities, we found it to be an acceptable measure that could be calculated from readily available data.

Effectiveness is a more difficult measure to determine. Although many variables affect the processing of requests in lending and borrowing, **fillrate** was used in this study as a measure of success or effectiveness. It was chosen because the necessary data was readily available at most libraries. It is defined in this study as:

$$fillrate = \frac{\text{requests filled}}{\text{requests processed}}$$

We assumed that randomness would factor out the myriad of variables such as sophistication of requestors, circulation policies, quality of verification, volumes lacked and other factors that can lead to unfilled requests.

Our regional pilot study was used to set hypothetical efficiency and effectiveness measures. Sixty-one percent was chosen as a minimally successful fillrate in lending and 84% as a base effective fillrate in borrowing. The lending figure was based on the overall average fillrate for lending in the RLG ILL subsystem. Eighty-four percent was selected in borrowing because approximately half the sample reached this goal. It is important to note that while some of the libraries processed an abnormally large number of requests, those libraries were not necessarily the most efficient in that they did not process the most requests with the least staff. Also, those libraries that were the least busy were not always the most effective in that they did not always have the highest fillrates.

In this paper we provide an overview of ILL staffing patterns in academic and research libraries, test our assumptions about workloads, and suggest some guidelines for libraries to follow in the analysis of their own efficiency and effectiveness. These results can be used to determine if ILL departments need additional staff and/or reorganization. The ratio of professional to paraprofessional staff, and the use of student workers are also examined with a view toward providing a clearer picture of operations at various libraries. Finally, we suggest strategies for changing operations and making the best use of these results in your own operations.

Workload

Determining what might be an appropriate workload requires an analysis of both the efficiency and effectiveness of the operation. A reasonable workload must be a balance of speed in processing and processing success, thereby insuring the most cost effective production of the highest quality product.

Table 2 depicts the mean and median fillrates for all the libraries responding to the survey. Due to some outlying responses, we selected the median rather than the mean to represent our minimum effectiveness criteria. Therefore, the borrowing fillrate of 84% is equal to our preliminary study, but the minimally effective fillrate in lending is slightly lower, 58%. This data is broadly descriptive of the sampled libraries and provides some basic comparison data for libraries interested in reviewing their operations with respect to other libraries; however, it does not reflect the question of efficiency.

Table 2 **Fillrate and Output for All Libraries**

fillrate = requests filled/requests processed

	n	*Mean*	*SD*	*Median*
Lending Fillrate	73	60%	12	58%
Borrowing Fillrate	70	83%	9	84%

Output = requests processed annually/F.T.E

Lending Output	74	5,905	2,715	5,429
Borrowing Output	74	2,439	1,163	2,130

Table 2 also shows output, our measure of efficiency, for all the responding libraries. As can be seen, the median output in lending and borrowing is 5,429 and 2,130 requests processed annually per fulltime staff equivalent, respectively. On the average, our data shows that processing borrowing requests requires more than twice the staff required for processing lending requests. It is important to note that all the responding libraries do not meet our definition of effective. That is, they do not all meet our 84% and 58% criteria for fillrates.

Table 3 is a summary of the output of all the libraries deemed effective. A comparison of the median figures shows a slightly lower fillrate in lending and comparatively unchanged fillrate in borrowing. Note that there were 38 libraries with lending fillrates of 58% or better and 40 libraries with borrowing fillrates of 84% or better.

Table 3 Output of Those Libraries Meeting Minimum Effectiveness Criteria

Effective = >58% lending fillrate and >84% borrowing fillrate

	n	*Mean*	*SD*	*Median*
Lending Output	38	5,878	2,483	5,429
Borrowing Output	40	2,558	1,391	2,126

These averages give libraries some basic guidelines to follow in analyzing their ILL services. They do not, however, clearly establish criteria which would unequivocally demonstrate that a particular library has an unreasonable workload and therefore requires more staff. We were interested in a measure which would clearly show this, therefore, we attempted to demonstrate a correlation between fillrates and requests processed per fulltime staff equivalent (FTE). As displayed in Appendix D, no statistically significant linear or non-linear correlations were found. These results and the similar median outputs of effective and ineffective libraries suggest that fillrate and output are relatively independent. Therefore, lower fillrates were not a direct indicator of an overworked office staff in this study.

Although fillrates were not correlated with output, our assumption that they serve as one measure of effectiveness still seems reasonable. Waldhart's analysis of "success rate", or fillrate, supports its use as one part of performance evaluation, but stresses the importance of fillrate being based on the final transaction.[7] This study did not collect data on turnaround, another often-used performance measure, because it was not readily accessible. It would be pertinent for future researchers to investigate the possible correlation of this measure with output.

If fillrate is unaffected by workload, a fact which might be explained by concluding that none of the libraries in this survey were understaffed, what are the responding librarians' perceptions of staffing adequacy and efficiency? Thirty-six of the respondents answered they did not have enough lending staff to do the job and 37 indicated that staffing was inadequate in borrowing. Furthermore, the correlations in Appendix D show a strong relationship which indicates that most offices which have inadequate staff in one area felt understaffed in both. Although the literature indicates that there is a trend toward establish-

ing separate lending and borrowing units, our survey reveals that staff working in one area continue to help in another when the need arises.[8] For example, half of the respondents with unusually high output in lending showed a below average output in borrowing. One explanation is that staff in borrowing assist in lending when demand is high, skewing the output figures to some degree.

This type of interaction makes it difficult to establish a reasonable workload. Borrowing operations may be able to handle more than the average number of requests if lending operations are underutilized and vice versa. This study reveals a 2.5:1 average ratio of lending requests/FTE to borrowing requests/FTE Any ILL office interested in analyzing their workload should understand how this can affect calculations. For example, assume there are two libraries that both have effective fillrates in lending and borrowing. Their outputs are:

	Library A	Library B
Borrowing Output	2,500 x 2.5 = 6,250	3,900 x 2.5 = 9,750 (requests/FTE)
Lending Output (requests/FTE)	6,000 x 1 = 6,000	3,150 x 1 = 3,150
Total Equivalent Output	12,250	12,900

Although Library A might look more productive upon casual examination, the equivalency calculations which take into account the additional staff time required to process borrowing requests, show Library B to be producing more.

If lending and borrowing operations are completely separate, then the output figures in Table 3 are probably sound averages. If staff in lending and borrowing assist one another when the need arises, then an overall equivalency using the procedure above on the median figures in Table 3, would result in 10,754 requests/2 FTE or 5,377 requests/FTE as an average productivity for effective libraries. Any library exceeding that average by a significant degree may have some basis for requesting additional staff, particularly if their fillrate, turnaround, patron satisfaction or other performance measures are poor; however, concerns about staffing adequacy may not originate with workload. For example, there was no significant correlation in the staffing adequacy responses and perceptions about efficiency. In addition, output and fillrates did not correlate with perceptions about adequacy.

Since perceptions of staffing adequacy are not correlated with productivity and fillrates other variables, such as office organization or procedures, may prove to have a greater effect on the feelings of staff about work overload. Malcolm Smith's report on RLG Libraries' ILL operations would be a good tool for librarians to use when analyzing their own work procedures.[9] In the next section we examine the impact of some office procedures (photocopying and wrapping) and types of staffing on efficiency.

Staffing

If an ILL department has a workload that is too demanding, it can be difficult to decide what type of additional staffing should be requested -- professional, para-professional or student. Many times, an inexpensive and quick solution to staffing shortages is the student worker. Such a solution, however, may not meet the needs of the department. Table 4 is an analysis of the ratio of professional:para-professional:student worker in all the libraries; in libraries meeting the efficiency criteria for output; in libraries meeting the effectiveness criteria for fillrate; and, in those libraries which meet both criteria. Some interesting comparisons are revealed.

Upon initial examination, it is apparent that lending and borrowing operations use more students and staff than librarians, and that improvements in efficiency can be accomplished by increasing student workers. However, an important change in staffing ratios occurs when effectiveness criteria are met. Effective libraries use more professionals and reduce the use of student personnel. Even in lending, an operation often assumed to require less professional input, fillrates are improved when a larger percentage of the work is done by librarians. When both effectiveness and efficiency criteria are met an interesting pattern emerges.

Table 4 **Median Staffing Ratios**

	All Libraries	*Efficient Libraries*	*Effective Libraries*	*Efficient and Effective Libraries*
Lending				
	n = 76	n = 26	n = 38	n = 19
Librarians	9%	8%	15%	13%
Staff	61%	54%	62%	51%
Students	30%	38%	23%	36%
Borrowing				
	n = 76	n = 26	n = 40	n = 20
Librarians	18%	17%	19%	20%
Staff	64%	60%	62%	63%
Students	18%	23%	19%	17%

Median values were used rather than means to eliminate the skewing effect of the larger non-academic libraries without student personnel.

In effective and efficient lending operations, the ratio of librarians and students to paraprofessionals is greater than in those libraries which do not meet the criteria. In borrowing operations, the use of student personnel decreases, the use of paraprofessionals stays about the same, but the percentage of librarian input increases. These trends in both lending and borrowing are contrary to the idea of reducing professionals in ILL. Our data show that professionals have a measurable impact on the quality of service, a characteristic often overshadowed by quantity. In addition, these figures indicate that an increase in student staffing might be a more appropriate solution to lending overload than borrowing overload.

The above results suggested a need for professionals in ILL, but we wondered if that was true given the increased use of bibliographic utilities. We examined our data and found a most unexpected correlation. A strong negative correlation was found between professional staffing in lending and the increased use of bibliographic utilities in both lending and borrowing (see Appendix D). This means that as the use of bibliographic utilities increases the professional staffing in lending goes down. This is contrary to the need for professionals demonstrated earlier.

One explanation may be that administrators assume the need for professionals decreases when verification is less difficult. Although this may be true to some degree, there are other contributions made by professionals that affect operations.

We found another surprising correlation, in all libraries, between the number of professionals in lending and the borrowing fillrate. Again, we found a strong negative correlation between the two, (see Appendix D) suggesting that the borrowing fillrate goes down when use of professionals or para-professionals in lending goes up. A possible reason for this phenomena is related to workload and the interdependency of staffing between lending and borrowing. In most ILL offices, the staff move back and forth between lending and borrowing when the demand arises. What is interesting about these correlations and the lack of correlation between staff and lending fillrate is that there seems to be a greater tendency to give lending priority.

This tendency for staff to devote energy to lending at the expense of borrowing effectiveness may be due to the speed of processing demanded by lending. Borrowing requests, which are considerably more complicated, may be easier to put off than lending requests, which must be addressed before the utility automatically bumps the request on as unfilled. Although the ability of staff to move back and forth enhances efficiency, this data suggests that serious consideration should be given to the negative affects it may have on effectiveness, particularly with regard to service quality for the library's own patrons. A parallel negative correlation between the total number of lending requests processed and the fillrate in borrowing lends additional support to this explanation (see Appendix D). It indicates that as workload in lending increases, the borrowing fillrate decreases.

Office Procedures

Other aspects of office organization, such as the difference between offices that do their own wrapping and photocopying and those that do not, also contribute to efficiency and effectiveness. Smith in his evaluation of RLG interlibrary lending proposes that those ILL departments which do their own wrapping and photocopying have greater control over turnaround time, another commonly used performance measure.[10] Fillrate, our performance measure for effectiveness, is not significantly affected by these duties. Output, our measure of efficiency, was unaffected in borrowing. Wrapping and photocopying duties do reduce the ability of lending personnel to process, however, the average reduction amounts to less than 150 requests processed annually/FTE Some of the libraries indicated they were only partially responsible for photocopying, so, it is difficult to make an exact determination of how much these duties affect productivity. It appears to be less influential than might be assumed.

Table 6 is a comparison of the percent of time contributed by professionals, paraprofessionals and students in both lending and borrowing operations. These figures compare a study published in 1972 with the results of this survey. Although methodologies differ, we believe it is reasonable to compare the two. It is clear from the table that an important change has occurred in recent years; staffing in lending has been reduced and staffing in borrowing has increased.

Table 6 **Lending and Borrowing Staffing By Staff Type Comparing 1972 and 1988 Percentages**

Lending	*Professional*	*Paraprofessional*	*Student*
1972*	49%	69%	73%
1988	37%	53%	67%
Borrowing			
1972*	51%	31%	27%
1988	63%	47%	33%

**1972 figures taken from: Association of Research Libraries, A Study of the Characteristics, Costs, and Magnitude of ILLs in Academic Libraries, (Washington, D.C.: ARL; 1972), p. 19-20.*

When comparing requests processed in each study, the staff time spent on borrowing requests versus lending requests amounted to a 2:1 ratio in 1972. Now, the ratio of staff time spent on borrowing versus lending requests is about 2.5:1. It appears that the changes

in processing due to new technologies have decreased the amount of staff time required to process lending requests compared to borrowing requests. Correlations in our data between lending librarians and use of a bibliographic utility and between lending staff and use of a bibliographic utility both show a significant negative correlation (see Appendix D). This further supports the notion that such advancements have allowed staff to reduce the amount of time they spend per lending requests compared to the time they spend on borrowing requests.

A reduction in tedious work procedures may not be the only explanation for this change in staffing patterns. One important point to consider is the bibliographic utilities either limit the amount of time staff have to process lending requests or pressure staff to respond quickly by monitoring turnaround. In doing so, the utilities emphasize lending response, but limit it. The combination fits nicely with the correlations mentioned earlier. The total effect gives lending urgent priority over borrowing fillrates, but reduces the staff time that can be spent on any one request. The result is that while the efficiency of libraries with this type of staff ratio may be high, their effectiveness may be significantly lower.

Many other office procedures not addressed by our study can also affect fill rate. For example, the following variables can affect lending fillrate, efficiency, and turnover:

1. Large collections of noncirculating material force libraries to reply negatively to lending requests.

2. Serials cancellations make journal runs incomplete and lack of serials holdings information increase the likelihood of receiving unfillable requests.

3. Heavy workload that makes it impossible to respond on the computer system before time limits expire.

4. Cumbersome office filing procedures which slow processing and may no longer be necessary due to recent technological changes.

5. Inadequate bibliographic resources in-house. Many libraries with numerous branches and special collections may not have accurate or complete holdings information that is readily accessible to a centralized interlibrary loan office.

6. Receipt of numerous "blind" or unverified requests from borrowing libraries. This may happen frequently to libraries with notable collections in a particular subject specialty or to libraries which serve as primary resources for their state's small public libraries.

Borrowing requests can also be affected by institution-specific constraints such as:

1. Reference personnel rather than ILL personnel may actually take patron requests. This removes the patron one-step from the staff that actually processes requests and may result in incomplete communication and missing information.

2. The nature of the request, i.e. if it is rare or very old material, will limit the

likelihood of success. A library which services a campus with active historians may receive an unusually high number of such requests. Analyzing unfilled borrowing requests by academic department, a method often used for collection development, could reveal a problem like this.

3. Policies pertaining to cost may slow turnover. If the patron absorbs all charges, many requests may be cancelled when patrons are informed of impending costs and turnover is slowed as libraries wait for cost estimates.

4. Variations in the method of counting unfilled requests such as how a library counts requests which are submitted by patrons but found to be part of the library's collection. Bibliographic access can have an effect on how often this situation occurs.

Both borrowing and lending can be hindered by staff resistance to change and the resulting maintenance of outmoded procedures. In light of the rapid influx of new technologies in interlibrary loan, an examination of job qualifications may reveal that newly hired staff should be required to have more entry-level skills. In addition, staff turnover can significantly slow efficiency and reduce effectiveness until new staff are knowledgeable about procedures, so the amount of recent turnover should be considered in evaluation. These are a few examples of the variety of problems which can affect fillrate. Included in the appendix is a form used in our office to monitor reasons for not filling requests. Use of a similar form might help identify problems in your office. Any thorough analysis of fillrates should be accompanied by some type of evaluation like this to determine if any intended changes can make a difference.

In summary, several important points about staffing have been suggested by our data:

1. professional input makes a measurable difference in the fillrates in both borrowing and lending;

2. ILL staff may give priority inadvertently to lending requests at the expense of borrowing service even though the time spent on each lending request is less than past studies indicate; and,

3. student personnel are more effectively used in lending than in borrowing.

These findings are probably no surprise to most ILL personnel. Some readers will no doubt read this and say to themselves, "I could have told them that!" However, this is the first objective statistical analysis which supports such observations by long-time interlibrary loan professionals. It is a current analysis of a very dynamic office environment in which pressures and emphasis are changing due to technology, new services and administrative priorities.

Discussion

Throughout this study, several results have suggested that the ratio of professional to paraprofessional may be the key to some problems with effectiveness. Although direct cause and effect cannot be concluded from the evidence in this study, certainly the results imply that there is a need for future research in this area. A number of the libraries responding to our survey indicated that no professionals were involved in ILL operations. However, Howland suggests that increased demands for training with the advent of the newer technologies has caused many libraries to upgrade the type of staff in ILL.[11] Apparently, examination of the types of staff in ILL offices does not paint a complete picture of the situation or analyze the needs of future demands.

Future research needs to concentrate on why the use of professionals coincides with the improvement of effectiveness. What competencies and skills are necessary in the management of ILL offices? Job analysis and a review of entry level skills may reveal that the recent technological advances have reduced the tedious nature of processing, but increased the level of expertise required for processing. If new competencies are emerging, how can staff development programming be altered to include them?

The use of professionals in ILL has obvious economic considerations for libraries, as well. If additional bibliographical expertise or some other skill imparted by an MLS is necessary, libraries may be able to solve the dilemma by providing release time for current staff to attend master's coursework. If a library is unable to afford the increased expense of a professional's salary, job rotation with reference professionals may help improve effectiveness. Internships could be another solution which might enhance recruitment as well. However, without identifying what specific skills and competencies contribute to the difference, alternative solutions to the presence of professionally trained staff will be difficult to determine.

The changing nature of ILL operations and increasing technological dependency continues to alter the demands on staff. The trends show an increasing need for ILL. This may change with the advent of online access to full-text journal articles. However, such a development may simply make copyright restrictions more complicated. Regardless of the change in format, the cost of information is likely to continue to increase and library budgets are unlikely to keep up with inflation. Sharing, therefore, seems to be an unavoidable circumstance that will force a greater burden on ILL operations. Librarians need to create a responsive climate in which changing skill requirements in dynamic areas such as ILL can be readily identified and the appropriate response (change of job entry skills, reclassification of job positions, enhanced training opportunities, improved staff retention, etc.) can be implemented

Conclusions

The labor-intensive nature of libraries makes analysis of efficiency an important part of operations, particularly when technological change creates internal reorganization. This study looked at efficiency and effectiveness in ILL with the intent of establishing some guidelines for lending and borrowing activity in academic and research libraries.

To aid your library's analysis of ILL, we have summarized the major conclusions suggested by this study, forwarded some caveats for using the guidelines, and suggested a few practical strategies for libraries that need to make changes.

- **Median fillrates and outputs give libraries a basic checkpoint against which they can measure their own efficiency and effectiveness.**

When comparing efficiency and effectiveness measures, libraries need to keep in mind how their goals might differ from the group studied. Differences in emphasis can affect how your rate compares to the median. In addition, it is important to understand that internal office procedures among ILL offices may dramatically differ from your procedures. This also can affect your assessment of your own output or effectiveness. You may have good reason for scoring below the median or above it, however, you will benefit from attempting to define why you do. The process of examination may reveal strengths or weaknesses in your operations and the results may serve as a viable argument in a justification for increased staffing or other desired changes.

- **Fillrate and output do not correlate; therefore, turnaround or some other performance measure should be reviewed when contemplating increases or decreases in staffing.**

Many administrators rely on output and fillrate to assess whether staffing is adequate. The lack of correlation between the two suggests that such measures may not be the best to use in analysis. Broadening the scope of observations may reveal different areas which suffer when staffing is inadequate or office procedures are inefficient. These are still good measures for determining basic guidelines of efficiency and effectiveness, but when concerns exist, turnaround, patron satisfaction and/or other performance measures may be required to draw a complete picture.

- **Effective and efficient libraries use more than the average number of professionals in lending and borrowing and fewer students in borrowing.**

If staffing appears to be adequate, but fillrates are not acceptable, then a review of the ratio of professional to staff to student worker may help in pinpointing problems. Productivity alone is not a good measure of how to select and assign staff in ILL. The ability of office personnel to cope with a high number of requests should be examined with a more critical eye. Less obvious, but not less important, service quality may be suffering. Reassigning existing staff to the ratios suggested by this paper may help. If existing staff within the department cannot be reassigned, help from other service areas or new staff could be used to adjust the ratios to the levels this study suggests are more successful.

- **Students are a more appropriate solution to work overload in lending than in borrowing.**

More is not always better. A general cry for additional help may not result in the type of staff increase that will affect the best change. Targeting the areas that seem to need the most assistance and analyzing what kind of staff would best accomplish the goal is essential. A combination of reassigning existing personnel and adding staff may allow you to hire students to do the job, but if the duties which are suffering are inappropriate for student workers then throwing students at the problem does not equal a solution.

- **Understaffed offices may tend to give lending processing priority over borrowing processing, thereby reducing borrowing fillrates.**

Sensitivity to what areas are being neglected is very important to ILL operations. If existing staff have been coping with a steadily increasing workload with little apparent distress, it may mean that they are compensating in an undesirable manner. We do not intend that lending should be de-emphasized. Rather, we feel strongly that lending libraries have an obligation to the system and their reciprocal libraries to continue to process lending requests rapidly. However, administrators concerned about the libraries' local patrons should be aware of inadvertent reductions in service quality and make the commitment required to maintain it when lending is busiest.

- **Currently, processing borrowing requests requires about 2.5 times as much staff time as processing lending requests.**

This can serve as one other measure to pinpoint problems. If staffing is unbalanced, or some employees are less efficient or less challenged than they might be, a quick analysis of this ratio may be a telling indicator of what changes need to be made.

In conclusion, our aim is to begin to define general measures which libraries can use to analyze their own performance. Variations occur and should be expected. We felt, however, that current concerns about increases in ILL and staffing problems make this study a necessary beginning tool in the process of internal review. It is important also to remember that this study is limited to ARL libraries and generalizations to other kinds of libraries should be made with caution.

In the appendix you will find a workform that may help in your own analysis of ILL operations. It is a basic checklist which can be used to compare your operations with median scores in this study. If you are concerned about understaffing, the use of this checklist can verify whether plans you have for increasing staff or reorganizing are based on valid assumptions. As we stressed earlier, institutional goals, as well as office procedures, should play an important role. Otherwise the result will be an unqualified comparison of performance measures, which is an inappropriate application. Remember, the workform is a very general checklist intended to initiate the process of assessment. More intense investigation should be the first response to any worrisome results.

Notes:

1. Association of Research Libraries, *ARL Statistics 1980-81: A Compilation of Statistics From the One Hundred and Thirteen Members of the Association of Research Libraries* (Washington: Association of Research Libraries, 1981), 18; Association of Research Libraries, *ARL Statistics 1987/88: A Compilation of Statistics From the One Hundred and Nineteen Members of the Association of Research Libraries* (Washington: Association of Research Libraries, 1989), 30.

2. Thomas J. Waldhart, "Patterns of Interlibrary Loan in the U.S.: A Review of Research." *LISR* 7 (1985): 209-229.

3. Office of Management Studies, Association of Research Libraries, *Interlibrary Loan in ARL Libraries: Kit 127* (Washington: Association of Research Libraries, 1986).

4. Office of Management Studies, Association of Research Libraries, *Interlibrary Loan in ARL Libraries: Kit 92* (Washington: Association of Research Libraries, 1983).

5. Association of Research Libraries, *A Study of the Characteristics, Costs, and Magnitude of Interlibrary Loans in Academic Libraries* (Westport, CT: Greenwood Publishing, 1972).

6. Robert V. Williams, "Productivity Measurements in Special Libraries: Prospects and Problems for Use in Performance Evaluation." *Special Libraries* 69 (Spring 1988): 101-114.

7. Thomas J. Waldhart, "Performance Evaluation of Interlibrary Loan in the United States: A Review of Research." *LISR* 7 (1985): 313-331.

8. Office of Management Studies, Association of Research Libraries, Interlibrary Loan in ARL Libraries: Kit 127. p. "flyer".

9. Malcolm D. Smith, *A Project to Improve Inter-Library Loans Services Within the Research Libraries Group: Report of Consultant* (London: British Library Lending Division, May 1984).

10. Ibid.

11. Office of Management Studies, Association of Research Libraries, *Interlibrary Loan in ARL Libraries: Kit 127*, p. "flyer".

March 15, 1988

Dear Interlibrary Loan Librarian,

The attached survey is very brief and is designed to provide staffing information about ARL libraries. Our hope is that some guidelines will be formulated from this survey that can be used to measure the adequacy of staffing in interlibrary loan.

We feel the information will be useful to interlibrary loan office managers and library administrators. At this time, Office of Management Studies is planning to publish the results of this research and provide each participating library a copy of the results.

Please take a few minutes to complete the survey and return it in the self-addressed stamped envelope provided. Thank you.

Sincerely,

Pat Weaver-Meyers
Head, Access Services Dept.

APPENDIX B

Interlibrary Loan Staffing Survey

Please fill in the correct response in the blank provided.

1) How many staff members work in the **lending** section of your interlibrary loan department? Please provide your answer in fulltime equivalents, for example, 20 hours/week of student help would be .5 FTE.

Librarians _____FTE (If the librarian(s) supervise lending and borrowing divide the workload as seems appropriate ex. .4 lending .6 borrowing.)
Classified Staff _____FTE
Students _____FTE

2) How many staff members work in the **borrowing** section of your interlibrary loan department? Please provide your answer in fulltime equivalents and include any assistance from other departments such as verification assistance from reference personnel.

Librarians _____
Classified Staff _____
Students _____

3) What is your fillrate in **lending**? _____

4) What is your fillrate in **borrowing**? _____

5) Total number of requests processed in **lending** (filled and unfilled) _____ for 1986/87.

6) Total number of requests processed in **borrowing** (items requested by patrons **not** the number of lender string libraries tried) _____for 1986/87.

7) Is the interlibrary loan department responsible for wrapping and mailing materials?
_____yes _____no _____sometimes (please describe)

_____
_____

8) Is the interlibrary loan department responsible for photocopying articles sent to other libraries?
_____yes _____no If not, what department does it?

_____

_____

Please circle the most appropriate response to the following questions.

9) The **lending** section has:
   a) more than enough staff to do the job
   b) adequate staffing
   c) not enough staffing to do the job

10) The **borrowing** section has:
   a) more than enough staff to do the job
   b) adequate staffing
   c) not enough staffing to do the job

11) The staff in our interlibrary loan department are:
   a) more efficient than ILL staff in other libraries
   b) about as efficient as ILL staff in other libraries
   c) less efficient than Ill staff in other libraries

12) The percent of **lending** requests processed through a bibliographic utility in your library is:
   a) 1% - 25% of all requests
   b) 26% - 50% of all requests
   c) 51% - 75% of all requests
   d) 76% - 100% of all requests

13) The percent of **borrowing** requests processed through a bibliographic utility in your library is:
   a) 1% - 25% of all requests
   b) 26% - 50% of all requests
   c) 51% - 75% of all requests
   d) 76% - 100% of all requests

14) Institution Name: _____

15) Name and title of person completing survey:

_____

Thank you.

APPENDIX C

Interlibrary Loan Operations Analysis Workform

Academic and Research Libraries Median Scores		Your Library
	Effectiveness	
Lending fillrate	= Lending requests filled ÷ requests received	
58%		_____%
Borrowing fillrate	= Borrowing requests filled ÷ requests received	
84%		_____%
	Efficiency	
Lending Output	= Total lending requests annually (filled & unfilled) ÷ Total lending staff (F. T. E)	
5,429 requests/F.T.E.		_____requests/F.T.E.
Borrowing Output	= Total borrowing requests received annually ÷ Total borrowing staff (F.T.E.)	
2,130 requests/F.T.E.		_____requests/F.T.E
Borrowing & Lending Output (equivalency)	= (lending output + (borrowing output x 2.5)) ÷ 2	
5,377 requests/F.T.E.		_____requests/F.T.E.

Staffing

Lending

Librarians	= Librarians in lending(F.T.E) ⁝ total lending staff (F.T.E.)
13%	_____%
Staff	= Paraprofessionals in lending(F.T.E.) ⁝ total lending staff(F.T.E.)
51%	_____%
Students	= Student workers in lending(F.T.E.) ⁝ total lending staff(F.T.E.)
36%	_____%

Borrowing

Librarians	= Librarians in borrowing(F.T.E.) ⁝ total borrowing staff(F.T.E.)
20%	_____%
Staff	= Paraprofessionals in borrowing(F.T.E.) ⁝ total borrowing staff(F.T.E.)
63%	_____%
Student	= Student workers in borrowing(F.T.E.) ⁝ total borrowing staff(F.T.E.)
17%	_____%

Lending to borrowing staff ratio	= Lending output ⁝ borrowing output
2.5 : 1	___ : ___

APPENDIX D

Linear and Quadratic Correlations

Pearson r Correlations	**r**	**probability**
Lending fillrate vs output	-.035	ns
Borrowing fillrate vs output	.096	ns
Lending vs borrowing staffing adequacy	.379	.0009
Librarians vs use of bib utility (lending)	-.44	.0001
Librarians vs use of bib utility (borrowing)	-.33	.0042
Lending staff vs borrowing fillrate	-.39	.0006
Lending librarians vs borrowing fillrate	-.34	.0039
Total lending requests vs borrowing fillrate	-.33	.0047

Quadratic Regression	**F ratio**	**p**
Lending fillrate vs output	.04	ns
Borrowing fillrate vs output	.71	ns

Calculations made by SAS proc corr and SAS proc rsreg.

BREAKDOWN OF ILL UNFILLS

	JAN	FEB	MAR	JUN	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Do Not Own	11	5	54	36	42	60	38	24				
Lack Volume	163	150	248	153	113	149	131	116				
Not On Shelf	13	80	118	55	57	30	29	33				
Branch	47	35	32	23	11	5	0	6				
Special Collection	316	181	122	159	151	139	120	125				
Checked Out	19	62	68	54	36	42	29	27				
Lost or Missing	9	18	18	16	13	20	3	16				
On Order	0	13	4	2	8	1	4	8				
Other	21	21	14	45	42	47	38	63				
Total Number of Unfills	605	568	721	581	496	513	410	435				